CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

August 8, 2002

VIA Next Day Air

Docket Office
California Public Utilities Commission
505 Van Ness Avenue, Room 2001
San Francisco, CA 94102

Re: R.02-06-001

Dear Docket Clerk:

Enclosed for filing in the above-entitled matter are the original and five copies of the **COMMENTS OF THE CALIFORNIA ENERGY COMMISSION CONCERNING DEMAND RESPONSE PILOTS**. Please return the extra copy in the enclosed, stamped, self-addressed envelope. Thank you for your attention to this matter.

Very truly yours,

JENNIFER TACHERA
Attorney for the
California Energy Commission
1516 Ninth Street, MS 14
Sacramento, CA 95814
Tel. No.: (916) 654-3870
Fax No.: (916) 654-3843
E-Mail: jtachera@energy.state.ca.us

Enclosures

cc: **R.02-06-001** - service list

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on policies and practices for advanced metering, demand response, and dynamic pricing.	Rulemaking 02-06-001

COMMENTS OF THE CALIFORNIA ENERGY COMMISSION CONCERNING DEMAND RESPONSE PILOTS

Pursuant to the Order Instituting Rulemaking adopted by the California Public Utilities Commission on June 6, 2002, and the Ruling Following Prehearing Conference issued by Administrative Law Judge Carew issued August 1, 2002, the California Energy Commission (CEC), respectfully submits the attached report. This report "Selected Demand Response Pilots in California: Contributions to Understanding Price Response" was prepared by CEC staff. Questions concerning the report should be addressed to Karen Herter at (916) 654-4328.

Respectfully submitted,

JENNIFER TACHERA
California Energy Commission
1516 9th Street, M.S.-14
Sacramento, CA 95814
Tel. (916) 654-3870
Fax. (916) 654-3843
E-mail: jtachera@energy.state.ca.us

August 8, 2002

Selected Demand Response Pilots in California: Contributions to Understanding Price Response

California Energy Commission Staff[1]

August 2002

OVERVIEW

Throughout the California electricity crisis, the California Energy Commission (CEC) has championed the use of demand response as a means of providing electric grid reliability, mitigating market power and reducing electricity prices. The CEC initiated and performed a demand responsiveness program during 2001 and demonstrated the capacity to reduce up to 250 MW of load though pilot tests. The CEC explicitly stated their support of demand responsiveness in their biannual 2002-2012 Electricity Outlook Report. More recently, the California Public Utilities Commission (PUC) also stated that demand response is a vital resource "to enhance electric system reliability, reduce power purchase and individual consumer costs, and protect the environment" (R.02-06-001, June 6, 2002).

The CEC and PUC have each issued an Order Instituting Rulemaking (OIR) to investigate demand response rates and technologies, and have agreed to work cooperatively as sister agencies in a joint investigation. It is expected that the PUC will assume the lead role with regard to investor-owned utility rates, tariffs, and meters, while the Energy Commission takes the lead role with regard to equipment on the customer side of the meter.

In an effort to expedite the OIR process for the two agencies, the CEC has prepared this document summarizing existing California demonstrations and experiments that test – or could be modified to test – demand response rates and technologies. It is hoped that this information will provide an overview of existing resources that might advance the OIR investigation in the immediate future.

This document addresses the following projects

1. Smart Thermostat Pilots at SCE and SDG&E mandated by D.01-03-073
2. SMUD Residential AC Cycling with Radio Controlled Thermostats
3. SMUD Residential Time-of-Use Energy Management System
4. Energyn Gateway-based Customer Education Demonstration
5. SDG&E Large C&I Experimental RTP Rate (Schedule EECC-HPO)
6. PG&E Large C&I Demand Response Pilot in Santa Clara and San Jose
7. AB1X-29 Meter Installation Evaluation
8. Turlock and Modesto Irrigation Districts AC Cycling Programs

[1] Prepared by Karen Herter with contributions from several additional CEC staff.

EXECUTIVE SUMMARY

There are many projects currently ongoing in California that were originally designed to test customer response to energy use information and/or cash payments and penalties. These projects could be modified to test price response with the introduction of dynamic rates. Table 1 provides an overview of the key features of the seven selected demand response projects as currently configured.

The "Payment or Rate" column indicates the motivation for customers to participate in the program, while the "Penalty or Price" column indicates the motivation for reducing load during events. In the case of the "Smart Thermostat" pilots conducted by SDG&E and SCE pursuant to PUC AB970 program direction, the pilots are nearly identical and so are described jointly.

Table 1. Existing Demand Response Projects in California

	Project	**CEC Contract**	**Sector**	**Location**	**Concept to be Tested**	**Payment or *Rate***	**Penalty or *Price***	**Hard-ware**
1	Smart Thermostat Pilots	RLW Analytics	Small Comm.	SCE	Temperature setpoint change; Annual payment	$300 per summer	$5 per override	Therm ostat
			Resid.	SDG&E		$100 per summer	$2 per override	
2	AC Cycling Thermostats	SMUD	Resid.	SMUD	AC cycling; Annual payment	$10-20 per summer	One free override	Therm ostat
3	Residential EMS	SMUD	Resid.	SMUD	Temperature setpoint change; CPP rate	*TOU + flat critical price (CPP)*	*27¢ per kWh*	Gate-way
4	Customer Education Demo	Energyn	Resid.	PG&E	Customer ed.; Hourly info	--	--	Gate-way
5	Hourly Pricing Offer	SD REO	>100 kW	SDG&E	Hourly info; End-use control; Hourly pricing	*TOU + Hourly On-peak Prices*	*Market-based*	Gate-way
6	E-PBIP	(None)	>200 kW	Santa Clara, San Jose	Capacity & energy payments	$8 per kW-month + 15¢ per kWh excess	$6 per kWh	AB29x Meters
7	AB29x Metering Evaluation	Christensen Associates	>200 kW	Calif.	Switch to TOU; Hourly info	*TOU*	--	AB29x Meters
8	Irrigation District AC Cycling	NCPA	Resid.	Turlock	AC Cycling; Annual payment	$15 early sign up + $25 check	No override	Therm ostat
			Resid. Comm.	Modesto	AC Cycling; Monthly payment	$5 per mo. $2 per ton	No override	Switch

As a consequence of the PUC initiation of R.02-06-001, the need for information about customer response to time-varying or dynamic pricing is now paramount. California policy makers will likely want to understand the California experience with dynamic rates in addition to the experiences of other states. Since some of the current projects were not designed to assess short-term dynamic price response, these projects are less useful than they might be for the purposes of the current OIR. Table 2 lists "problems" with the existing projects from this new perspective, and offers preliminary recommendations for modifications to allow these pilots to be extended or adapted to collect such information. Each of the specific pilot descriptions that follow provides greater substantiation for these preliminary recommendations.

The CEC Staff recommends that the PUC identify the most expeditious means to modify the pilots mentioned here. In some instances the utility conducting the pilot is willing or eager to make the change, but wishes official confirmation by the PUC that such changes are acceptable, and that any additional costs can be recovered. Since the pilots under the control of the PUC stem from several distinct decisions or proceedings, supplying directives to the utilities may not be straightforward. We do suggest, however, that the means for and the actual direction itself come quickly. Those examining the policy issues of dynamic pricing in R.02-06-001 eagerly await the results.

Table 2. Demand Response Projects in California: Problems and Preliminary Recommendations

	Project	Shortcoming vis-à-vis DR OIR	Recommended Fix *(preliminary)*
1	D0103073 Pilots	D0103073 does not require price response testing.	Put 100-200 of the existing participants from each territory on a CPP rate
		SDG&E is hesitant to incorporate a price-responsive component without an explicit PUC directive to do so.	Continue to work with SDG&E program managers. Submit joint CEC/SDG&E Advice Letter or petition to modify D0103073
2	AC Cycling with Radio-Thermostat	SMUD is having trouble recruiting customers for this program	Stretch funding by combining the inexpensive hardware (thermostat) of the AC Cycling program and the rate of the EMS program to create a 100 participant hybrid. In addition to reducing cost, the hybrid is likely to attract larger users and gives customers more control.
		AC cycling provides very little customer control	
3	Residential EMS	Progress is slow. Funding may be insufficient.	
4	Energyn Gateway Demonstration	No financial incentive to drop peak load (except standard rate savings).	Offer a dynamic rate to a portion of the participants.
5	San Diego RTP (EECC-HPO)	Need tariff before pilot can commence. Hardware installation is behind schedule	Approval of E-3782 will address tariff issue. More interaction with contractor may speed progress.
6	E-PBIP	Payment from baseline problematic.	Offer a dynamic rate to a portion of the participants in lieu of the payment/penalty incentive scheme.
		Penalty for non-compliance too high	
7	Meter Installation Evaluation	Utilities have not provided individual meter data required for proper analysis.	(a) Request friendly cooperation of the utilities. (b) Request CPUC to order provision of data (c) Have IOUs prepare analyses and reports
		No dynamic rates in use for evaluation of price response	Offer one or more dynamic rates to large customers

1. D0103073 Smart Thermostat Pilots (SCE, SDG&E)

CEC contact: Karen Herter: (916) 654-4328
Contractor/Grantee: RLW Analytics, Roger Wright: (707) 939-8823 x22
Term: March 26, 2002 to March 31, 2004.
CEC Funding: $250,000 (SB5x)

Background

In March 2001, the California Public Utilities Commission (CPUC) issued Decision 01-03-073 to satisfy an AB970 mandate codified in Public Utilities Code §399.15(b) to evaluate the effectiveness of price responsive thermostats. In the Decision, the CPUC ordered Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E) to conduct smart thermostat based load management pilots in the small commercial and residential sectors, respectively.

Project Description

The existing D.01-03-073 pilot provides 5,000 SCE small commercial and 5,000 SDG&E residential customers with a participation incentive ($500 SCE, $200 SDG&E) and a two-way communicating thermostat that can be remotely controlled by the utilities for curtailment purposes. Curtailment frequency, duration, and setpoint adjustment are determined by the utilities. Customers can override the curtailment signal at any time, but will be penalized for each override ($5 SCE, $2 SDG&E). At the end of the year, customers will be paid the incentive minus any override penalties. Expenditures are to be tracked in a balancing account and will be addressed in each electric utility's next cost of service/performance-based rate making proceeding.

Progress and Schedule

As of August 2002, SCE and SDG&E have recruited the original 5000 participants and have installed about 2000 thermostats. The systems have been tested several times.

Evaluation Goals and Responsibilities

Each utility is required to establish an independent program evaluator to carry out a process evaluation (due December 2002) and impact evaluation (due February 2003). The CEC is not privy to, but hopes to obtain, load research data to conduct an evaluation of building response to temperature setpoint changes.

Problems and Preliminary Recommendations

The existing smart thermostat pilot research designs do not include price-response as intended by AB970. In December 2001, the CPUC and CEC agreed to remedy this by helping the utilities modify the existing pilots. SCE and SDG&E agreed to collaborate. In Spring 2002, the CEC contracted with RLW Analytics to design, implement, and assess the price-response experiment, which involves a critical peak pricing (CPP) rate applied to 100-200 of the existing participants in each territory.

Currently, both SCE and SDG&E are designing the CPP rate, focus groups and marketing material. SCE focus groups took place on July 30-31, 2002. Focus group participants representing 20-200 kW commercial customers were unanimously interested in signing up for the new rate offering. Smaller (<20 kW) commercial customers were less interested, indicating that load shifting and/or conservation was too difficult or not possible for them. Many participants said that they would be interested if this were offered as a residential rate. Submission of SCE's small commercial CPP rate is scheduled for August.

SDG&E has been concerned about adding to the existing residential pilot without formal PUC approval. We are currently considering several options to address this concern, e.g. a CEC petition to modify D.01-03-073 or a joint CEC/SDG&E Advice Letter.

2. SMUD Residential AC Cycling with Radio-Controlled Thermostats

CEC contact: Randel Riedel (916) 654-4109
Contractor/Grantee: SMUD, Craig Sherman: (916) 732-6943
Term: August 2, 2001 to March 30, 2004
CEC Funding: $750,000 (SB5x, shared with the SMUD Time-of-Use Energy Management System program)

Background

SB5X allocated $2 million for research projects geared toward time-of-use or real-time rate structures. The CEC requested proposals to develop and test demand response technologies as well as customer education and acceptance. SMUD received a grant of $750,000 to assist in funding two projects: Radio Controlled Thermostat and the Residential Time-of-Use Energy Management System.

Project Description

The radio-controlled thermostat (Honeywell) will allow SMUD to cycle the air conditioning compressor and indoor fan on up to 200 residential air conditioning systems.

Progress and Schedule

Comverge has conducted a paging signal strength/dead zone field study. Initial results indicate that the signal strength is strong in all areas tested except in the southernmost part of Sacramento County.

Thermostat installation began in the third week of June after training from Comverge. About a dozen thermostats were installed the first week. The major problem to date: when the power available to run the thermostat and communication module is insufficient, a special transformer/shunt relay must be installed for the thermostat to operate properly.

Evaluation Goals and Responsibilities

Nexant has been hired to evaluate customer acceptance and load impacts. Nexant will also address the following issues.

- occupant comfort
- extent of and reasons for overrides
- relationship of peak demand savings to variations in outdoor temperatures
- household demographics, building types and climatic characteristics
- cost-effectiveness of the pilot and projected cost per kW for the post pilot phase

Problems and Preliminary Recommendations

Marketing has not yielded the expected number of participants. As of late June, there were fewer than 100 signed agreements of 200. SMUD is now considering a modification of the sampling criteria, which may invalidate the current sampling strategy. The same program with a CPP rate may attract more customers by offering more customer control and savings beyond the current paid incentives.

3. SMUD Residential Time-of-Use Energy Management System

CEC contact: Randel Riedel: (916) 654-4109
Contractor/Grantee: SMUD, Craig Sherman: (916) 732-6943
Term: August 2, 2001 to March 30, 2004
CEC Funding: $750,000 (SB5x, shared with the SMUD Radio-controlled Thermostat program)

Background

SB5X allocated $2 million for research projects geared toward time-of-use or real-time rate structures. The CEC requested proposals to develop and test demand response technologies as well as customer education and acceptance. SMUD received SB5X funds for two demand response projects: Radio Controlled Thermostat and the Residential Time-of-Use Energy Management System.

Project Description

Participants in this demand response program will pay $10 per month and be put on a dispatchable time-of-use rate (a.k.a. critical peak pricing or CPP). SMUD will install energy management systems (EMSs) with interval meters and demand response equipment, allowing customers to pre-program HVAC equipment, pool pumps and electric water heaters to automatically respond to radio-signaled critical peak prices. A critical period will be called when one or more of the following occurs:

(1) outside air temperature is greater than 95F and the District system load is greater than 2,100 MW

(2) the next day market price for energy is greater than $90/MWh as defined by the Dow Jones On-Peak Firm Energy price using NP-15 indices

(3) a district system electrical emergency is declared (e.g. major transmission line down)

The participation goal for this project is 200 existing and 125 new single-family residential buildings.

Progress and Schedule

SMUD is currently finalizing the CPP rate and marketing materials. Between one and five thousand customers have been targeted for marketing, from which 200 are expected to participate. SMUD has chosen to use the Comverge Maingate system for the residential demand response capability. Installation is planned to begin in late September, and customers will be on program for 9 months (minimum).

SMUD is currently considering participation in a California Power Authority (CPA) funded program to install up to 10,000 Comverge Maingate systems in California.

Evaluation Goals and Responsibilities

Nexant is the CEC contractor responsible for evaluating customer acceptance and peak load impacts in response to price signals. Nexant will address the following issues.

- occupant comfort
- extent of and reasons for overrides
- relationship of peak demand savings to variations in outdoor temperatures
- household demographics, building types and climatic characteristics
- cost-effectiveness of the pilot and projected cost per kW for the post pilot phase

SMUD has sub-contracted with Blue Sky Consulting to evaluate this program.

Problems and Preliminary Recommendations

Progress is slow and CPP rates are not fully developed. SMUD may want to reconsider the use of the Comverge Maingate in this experiment because it is relatively expensive.

4. Energyn Residential Gateway Demonstration

CEC contact: Randel Riedel: (916) 654-4109
Contractor/Grantee: The Energyn Group, Tim Locke: (916) 966-3770
Term: June 27, 2001 to June 18, 2004
CEC Funding: $500,000 (SB5x)

Background

To fulfil SB5X, the CEC requested proposals to develop and test demand response technologies as well as customer education and acceptance. Energyn received $500,000 to investigate customer education and acceptance while demonstrating their gateway system in California residences.

Project Description

The project goal is to install the Energyn iPower gateway system in 100 California homes to control major appliances and/or circuits and monitor energy and load impacts over 12 months. The electrical load usage data can be used for billing and educational purposes. Energyn will provide participants with information on available conservation and energy efficiency programs. It is projected that each participating home in this pilot will realize .75 kW to 1.5 kW peak savings. Primary customer benefits include:

- Remote and enhanced control of programmable thermostat
- Detailed online information on hourly, daily, monthly and annual energy use
- Notification of user defined energy events, such as high/low energy use thresholds
- Easy linkage with third party Lonworks compatible appliances and devices

Progress and Schedule

Energyn is currently Beta testing equipment and software interfaces in 10 houses. Ongoing customer acquisition activities include radio, direct mailing, and call center to selected (defined geographic area and current or interested DSL users) existing customer base of 50,000. Phase 2 installations are scheduled to begin in August 2002.

Evaluation Goals and Responsibilities

Nexant is responsible for the evaluation of peak and off-peak load impacts and customer acceptance for this project. Nexant will evaluate the effectiveness of daily energy information in helping customers reduce electricity bills and the effectiveness of using gateway systems to educate homeowners about time-of-use (TOU) pricing and load shifting behaviors.

Loren Lutzenhiser will be conducting the behavioral analysis of the end users as related to the educational component and use of the DR equipment.

Problems and Recommendations

There is no financial incentive for demand response beyond standard rate savings. We recommend that PG&E offer a portion of these pilot participants a dynamic rate and compare the response between the education only group and education plus dynamic rate group.

5. SDREO/SDG&E Large C&I Experimental Hourly Pricing Rate

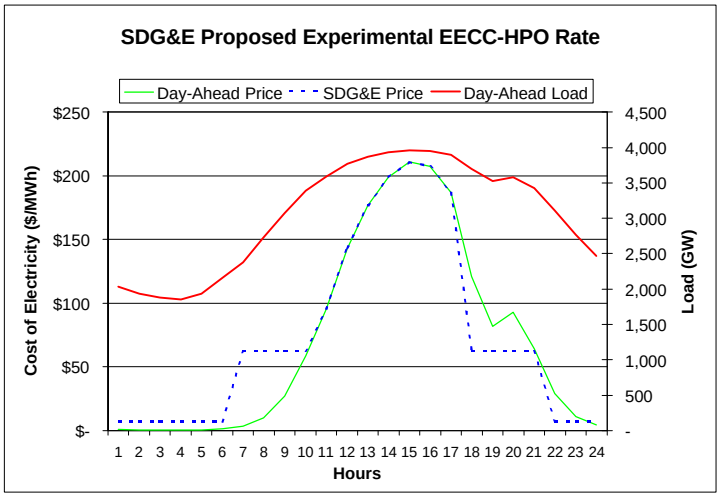
CEC Contact: Mike Messenger: (916) 654-4774
Contractor/Grantee: San Diego Regional Energy Office (SDREO), Peter Livingston: (619) 699-0636
Term: June 22, 2001 to June 22, 2003
CEC Funding: $2,562,683 (SB5x)

Background

This contract covers Phase 2 of a two-part SB5x project. In Phase 1, about 40 customers achieved a 5.45 MW reduction in a pilot test held in May of 2001.

Project Description

The SDREO Energy Management Program (EMP) is working with SDG&E to implement a small hourly pricing pilot and hardware demonstration in the SDG&E service territory. The pilot will be limited to 35 non-residential UDC bundled service customers on Schedule EECC-HPO (Electric Energy Commodity Cost-Hourly Pricing Option). Participants are likely to be larger than 100 kW customers with CEC-funded meters, since customers under 100 kW will be required to purchase their own advanced meters.



The pilot will involve the experimental EECC-HPO hourly pricing rate (Figure 1) with day-ahead notification, 15-minute interval meters, web-based real-time usage information, and SDREO-subsidized demand response technologies for HVAC, lighting, and process loads. At the customer's request SDREO will provide assistance to help the customer plan specific response actions. SDREO has CEC funding for 5 to 10 Infotility-installed gateway systems, which will be used to (1) store and initiate demand response strategies and (2) maintain a continuous Internet connection.

Progress and Schedule

In July, the CPUC issued draft Resolution E-3782 approving SDG&E's AL 1406 tariff and extending the program end date to September 30, 2003. Final resolution approval is expected August 22, 2002. SDREO is currently gathering marketing information for the program.

Evaluation Goals and Responsibilities

Draft resolution E-3782, requires that SDG&E file two program evaluation reports to the Energy Division: (1) an interim report due February 1, 2003, and (2) a final report due 60 days from the program termination date. The CEC has contracted with Nexant to evaluate the load impacts of this project.

Problems and Preliminary Recommendations

The project is behind schedule but appears to be moving forward. The first billing period was scheduled for August 2002, but will be rescheduled in light of draft Resolution E-3782.

6. PG&E Large C&I Demand Response Pilot (Santa Clara/San Jose)

CEC contact: Don Kazama: (916) 654-5072
CEC Funding: None

Background

The Pilot Base Interruptible Program was authorized by PUC decision D.02-04-060 on April 22, 2002. The program tariff was approved on May 21, 2002.

Program Description

The E-PBIP pays large commercial and industrial customers to reduce demand when the CAISO issues a Stage 2 curtailment notice (when the State's operating reserves drop below 5%). The E-PBIP program operations are limited to one 4-hour event each day, no more than 3 consecutive events, 10 events per month, and a maximum annual program limit of 120 curtailment hours. The program requires that customers identify a firm service level below their average weather-adjusted demand, and then reduce load to that level within 30 minutes each time a curtailment event is called by the CAISO. The customer must commit to curtail at least 15% of their highest monthly maximum demand during the summer on-peak and winter partial-peak periods over the past 12 months, or a minimum of 50 kW, whichever is greater. E-PBIP program participants must be PG&E full-service customers located in the Santa Clara County, having an average monthly demand of at least 200 kW.

This pilot program pays $8.00 per kW per month, year-round. A bonus incentive of $0.15 per kW is paid for energy reductions below the firm service level. The customer must commit to curtail at least 15% of their highest monthly maximum demand during the summer on-peak and winter partial-peak periods over the past 12 months, or a minimum of 50 kW, whichever is greater. Minimum load drop must be sustained over a 4-hour period. Customers are penalized $6.00 per kWh short of the firm service level.

PG&E estimates that about 1,350 customers in the Santa Clara/San Jose area would be targeted for a total load of about 950 MW. Coordination for the pilot is the responsibility of PG&E's Cupertino office.

Progress and Schedule

PG&E's Santa Clara County Area Load Management Coordinators and Representatives have received orientation and training on the E-PBIP program details. PG&E commenced the rollout of the program in July by mailing customers a program brochure of all program offerings including E-PBIP. An annual customer survey is planned in May 2003. Don Kazama is in direct communications with PG&E program staff for monitoring purposes.

Evaluation Goals and Responsibilities

PG&E is responsible for the evaluation of this program.

Problems and Preliminary Recommendations

In general, paying customers for reduction from a baseline always rewards the most inefficient buildings. For example, assume two buildings identical in every way except that Building #1 uses 1000 kW of incandescent lighting, while Building #2 uses 250 kW of efficient fluorescent lighting. To drop 200 kW, Building #1 need only drop only 20% of its lighting, while the more efficient Building #2 must drop 80% of its lighting.

The penalty for energy use over the firm service level is too severe. We expect that this severe penalty will discourage participation in this program.

7. AB1X-29 Meter Installation Evaluation

CEC contact: David Hungerford: (916) 654-4906
Contractor/Grantee: Christensen Associates, Steven Braithwait (608)231-2266:
Term: March 22, 2002 - December 31, 2004.
CEC Funding: $398,975 (AB29x)

Background

On April 5, 2001, the Legislature adopted AB29x. Section 14.d(4).B appropriated $35 million for the CEC to "provide time-of-use or real time meters for customers whose usage is greater than 200 kilowatts." By June the CEC had reached agreements to fund nearly 20,000 advanced interval meters at a state cost of about $30 million (~$1,500 per meter). The agreements called for:

1 CPUC approved, Direct Access compatible, billing quality interval meters
2 Communication to each meter for remote collection of end-user usage once per day
3 Direct customer access to their own metered usage data at intervals more frequently than once per day
4 A website providing personalized customer information, pricing and system status

Since customers with demands greater than 200 kW account for approximately 30% of peak demand, the CEC had hoped that the PUC and the utilities would offer rates or programs taking advantage of the new metering systems. As of July 2002, the meters have not been used for this purpose.

Project Description

In the absence of demand response rates and programs, evaluation of the meter program is necessarily limited. The purpose of this project is to evaluate the RTEM installation program as follows:

1. *Evaluate impacts of installing meters and switching to time of use rates.* Evaluated impacts include amount of energy, peak load power use, and load shape. This investigation will improve our ability to characterize observed changes in building schedules, occupant behavior and production practices by customer subgroups. The investigation will also address the motivations, behaviors, and perceptions of those instituting the changes. The analysis will address changes by tariff groups using cross-sectional and longitudinal measures, and also by SIC code, location, and weather. Other variables analyzed will include metering technology, prices/costs, information feedback through websites and bills, and communications technologies.
2. *Document and evaluate the effectiveness of the meter installation program.* The focus of this evaluation will be on successful and unsuccessful strategies employed by the utilities, and on barriers that arose during the project and methods of overcoming those barriers. With cooperation from the utilities, we also hope to characterize data management issues from the practical implementation perspective; e.g. billing process integration. The result of this effort should be to improve our ability to understand how these technologies and tariffs might be accepted by different groups of customers, what kind of load management responses we might expect from certain groups, and how best to approach these different groups, especially for customers below 200 kW, in implementing future meter/tariff programs. We also hope to improve our ability to better characterize and forecast demand response from future dynamic pricing program activities.

Progress and Schedule

The contractor will begin collecting preliminary interview data by mid-July; interview topics and question designs are currently being refined. Existing load, usage, and installation data are being compiled from multiple sources.

Evaluation Goals and Responsibilities

The evaluation goals of this study are as follows:

- Assess the total energy use and load shape changes among customers receiving AB29X meters and explain those changes in terms of potential causal mechanisms, including improved information, price changes, and tariff switching.
- Evaluate the installation process, technology choices for meters and communication, information provision, consumer education, and other elements of the project that affected customers. Analyze for lessons learned to provide input, where possible, for future projects and programs.

Problems and Preliminary Recommendations

This analysis requires cooperation from the utilities in releasing individual customer usage data. Because the meters themselves have no energy saving capability, the effects of other variables, such as tariff changes and customer access to website usage information, must be examined on an individual level to determine impacts. The aggregated data set currently available from the utilities does not allow for this level of analysis.

To date none of the utilities have been willing to provide customer level data to the CEC, even with confidentiality controls. Unless the CEC can persuade the utilities to cooperate more fully, those under PUC oversight should be required to provide the necessary data to the CEC or its contractor.

8. Irrigation District AC Cycling Programs

CEC contact: Dennis Fukumoto, (916) 653-6222
Contractor/Grantee: Northern California Power Agency (NCPA)
Term: May 2, 2001 to May 1, 2004
CEC Funding: See below for funding from full contract #400-00-046 (SB5x)

The Turlock and Modesto Irrigation District programs came to our attention too late to allow for a full description such as was provided for the previous seven projects. For more information on these projects, please contact Dennis Fukumoto at (916) 653-6222.

Turlock Irrigation District

Contact: Robert (Bob) Hondaville: (209) 883-8325
CEC Funding: $487,500

Turlock has installed Internet-programmable pager-activated thermostats in 2000 homes. Installation is not complete, but predicted peak load drop is 2 MW. The thermostats will be used to control AC compressors 15 of every 30 minutes. Control of the thermostat is returned to participants if the indoor temperature should exceed 85F.

The communications system uses one-way 150 MHz pager, which is more durable than the two-way 900 MHz paging technology. The pager contract, which allows for a certain number of pages per year, costs $1000.

Modesto Irrigation District

Contact: Henry Azevedo: (209) 526-7691
CEC Funding: $1.1 million

Modesto has installed Cannon Technology pager-activated cycling equipment in 3000 homes. The contract with customers allows ten minutes control out of every 30 minutes. Cycling tests have shown 3.3 to 3.6 MW of total demand reduction. A full shed test showed a 9.9 MW load drop. The program will run May - September 2002.

CERTIFICATION OF SERVICE

I, PAMELA EBBERT, certify that I have caused copies of the **COMMENTS OF THE CALIFORNIA ENERGY COMMISSION CONCERNING DEMAND RESPONSE PILOTS**," to be served by electronic mail, on or before August 9, 2002, on all parties who provided e-mail addresses for the identified service list provided by the California Public Utilities Commission for this proceeding. I have also served Administrative Law Judge Carew and Commissioner Peevey and the California Public Utility Commission's Docket Office with proper paper copies to be delivered by courier on August 9, 2002.

PAMELA EBBERT

_____

DECLARANT
(Service Lists attached to the original only.)